

-- 42. A method of reconstituting an animal embryo, the process comprising transferring a donor nucleus into a first recipient oocyte followed by removing and transferring said nucleus from said first recipient oocyte to a further recipient oocyte or an enucleated fertilised zygote.

44. The method as claimed in claim 42, wherein the further oocyte is an enucleated MII oocyte.

45. The method as claimed in claim 42, in which a reconstructed embryo obtained thereby is cultured *in vitro* or *in vivo* to a stage suitable for transfer to a final surrogate recipient for development to term.

46. The method as claimed in claim 42, in which a reconstructed embryo obtained thereby is transferred to a final surrogate recipient to support embryo development and development to term.

47. The method as claimed in claim 42, in which the donor nucleus is genetically modified.

48. The method as claimed in claim 42, wherein the donor nucleus is donated by a diploid cell.
49. The method as claimed in claim 48, wherein the donor nucleus is from a G1 cell.
50. The method as claims in claim 48, wherein the diploid cell is arrested at the G1/S-phase border.
51. The method as claimed in claim 42, wherein the donor nucleus is donated by a tetraploid cell.
52. The method as claimed in claim 51, wherein the tetraploid cell is a G2 cell.
53. The method as claimed in claim 51, wherein the tetraploid cell is a mitotic cell.
54. The method as claimed in claim 42, wherein the donor nucleus is donated by a cell of unknown ploidy.
55. The method as claimed in claim 54, wherein the cell of unknown ploidy is a growing cell at any point in the cell cycle, *i.e.*, G1, S, G2 or M.
56. The method as claimed in claim 42, wherein the donor nucleus is donated by a cell arrested at any point in the cell cycle, *i.e.*, G0, G1, G1/S, S, G2 or M.

57. The method as claimed in claim 42, wherein the first recipient oocyte is enucleated.
58. The method as claimed in claim 42, wherein the first donor nucleus is transferred into the first recipient oocyte by cell fusion, or by cell or nuclear injection.
59. The method as claimed in claim 42, in which the animal embryo is an ungulate species embryo.
60. The method as claimed in claim 59, wherein the animal embryo is a cow or bull, pig, sheep, goat, camel, or water buffalo embryo.
61. The method as claimed in claim 42, wherein the animal embryo is a mouse, rat, or other rodent embryo.
62. The method as claimed in claim 42, wherein the animal embryo is a lagomorph embryo.
63. The method as claimed in claim 62, wherein the animal embryo is a rabbit embryo.
64. The method as claimed in claim 42, wherein correct ploidy is maintained by combination of donor and recipient cell cycle stage.

65. The method as claimed in claim 42, wherein correct ploidy is maintained by treatment of the reconstructed embryo with any compound/s that maintain correct ploidy.

66. The method as claimed in claim 42, wherein the nucleus is transferred from the first recipient oocyte to a fertilized zygote.

67. The method as claimed in claim 42, wherein the further recipient oocyte is an activated oocyte.

68. The method as claimed in claim 42, wherein the further recipient oocyte is enucleated.

69. A method of preparing an animal, the method comprising:

- (a) reconstituting an animal embryo as claimed in claim 42, thereby obtaining a reconstituted embryo,
- (b) causing a foetus to develop from the embryo, thereby obtaining an animal foetus; and
- (c) causing an animal to develop to term from the animal foetus, thereby obtaining an animal.

70. The method as claimed in claim 69, further comprising:

- (d) breeding the animal.

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71. A method as claimed in claim 69, wherein the animal embryo is further manipulated prior to full development of the embryo.

72. A method as claimed in claim 69, wherein the animal foetus is further manipulated prior to full development of the embryo.

73. The method as claimed in claim 69, wherein a new cell line or cell population is derived from the reconstituted embryo.

74. The method as claimed in claim 69, wherein a new cell line or cell population is derived from the animal foetus.

75. The method as claimed in claim 69, wherein a new cell line or cell population is derived from the animal.

76. The method as claimed in claim 69, wherein more than one animal is derived from the reconstituted embryo.

77. A reconstituted animal embryo, which is capable of giving rise to a live birth and is prepared by the method as claimed in claim 42.

78. An animal obtained by the method as claimed in claim 69.

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79. An animal obtained from a reconstituted animal embryo as claimed in claim 77.

80. An embryonic stem cell line or cell population obtained from an embryo
produced by the method of claim 42.

81. An undifferentiated cell line or cell population obtained from an embryo
produced by the method of claim 42.

82. A differentiated cell line or cell population obtained from an embryo produced by
the method of claim 42.--

Remarks

Claim 1 has been cancelled without prejudice or disclaimer of the subject matter therein. New claims 42-82 are sought to be added. Support for the new claims are found throughout the matter specification, for example, in the claims as originally filed. These changes are believed to introduce no new matter, and their entry is respectfully requested.